

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: September 9, 1991
Date Submitted: August 23, 1991
Project: Acid Tank Contamination, PO #M21338

**RESULTS OF ANALYSES OF THE ACID SAMPLE
FOR PERCENT SOLIDS (% BY WEIGHT)**

<u>Sample #</u>	<u>Percent Solids</u>
M21338	19%
 <u>Quality Assurance</u>	
Method Blank	0%
M21338 (Duplicate)	18%

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**RESULTS OF ANALYSES OF THE ACID SAMPLE
FOR TOTAL METALS BY
INDUCTIVELY COUPLED PLASMA (ICP)
METHOD 6010
Results Reported as $\mu\text{g/g}$ (ppm)**

<u>Sample #</u>	<u>M21338</u>
<u>Analyte:</u>	
Arsenic	210
Cadmium	<10
Chromium	36,000 ^{fb}
Lead	190
Silver	<10
Copper	1,900 ^{fb}
Nickel	21,000
Zinc	450
Iron	110,000 ^{fb}

fb - The analyte indicated was also found in the blank sample.

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METHOD 6010
Results Reported as $\mu\text{g/g}$ (ppm)
Quality Assurance

<u>Sample #</u>	<u>Method Blank</u>	<u>M21338 (Duplicate)</u>
<u>Analyte:</u>		
Arsenic	<10	220
Cadmium	<10	<10
Chromium	16	34,000 ^{fb}
Lead	<10	190
Silver	<10	<10
Copper	10	1,900 ^{fb}
Nickel	<10	29,000
Zinc	<10	470
Iron	53	99,000 ^{fb}

^{fb} - The analyte indicated was also found in the blank sample.

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**RESULTS OF ANALYSES OF THE ACID SAMPLE
FOR TOTAL METALS BY
INDUCTIVELY COUPLED PLASMA (ICP)
METHOD 6010
Results Reported as % Recovery
Quality Assurance**

<u>Sample #</u>	M21338 <u>Matrix Spike</u> % Recovery	M21338 <u>Matrix Spike Duplicate</u> % Recovery	<u>Spike Level</u>
<u>Analyte:</u>			
Arsenic	104%	109%	1,000
Cadmium	99%	105%	500
Chromium	ai	ai	500
Lead	96%	103%	1,000
Silver	101%	106%	200
Copper	ai	ai	500
Nickel	ai	ai	1,000
Zinc	99%	104%	500
Iron	ai	ai	1,000

ai - The amount spiked was insufficient to give meaningful recovery data.

FRIEDMAN & BRUYA, INC.
3008/B 16th Avenue West
Seattle, WA 98119

SAMPLE CHAIN OF CUSTODY

B-MZR-A

Send Report To:

Company Alaskan Copper Works Contact _____
Address P.O. Box 35410
City, State, Zip SEATTLE, W.A. 98124
Phone # (206) 423-5800 Date 8/23/01

SITE NO.

PROJECT NAME

PURCHASE ORDER #

ACID TANK CONTAMINATION

M 2 1 3 3 8

SAMPLERS (signature)

PROJECT LOCATION

Cirigoren A. Sproer

3200 6th AVE. S.

REMARKS

SAMPLE DISPOSAL INFORM.

- ☐ Dispose after 30 days
☒ Return Samples
☐ Call for Instructions

SAMPLE #

Date/Time
Sampled

Type of
Sample

of
Jars

Lab
Sample #

Analyses
Requested

M21338

8/23/01

ACID

1

22139

TOTAL SOLIDS
Cr, Cu, Ni, Zn, Fe
Pb, Cd, Ar, Ag

SIGNATURE

PRINT NAME

COMPANY

Date

Time

Relinquished by:

Received by:

Relinquished by:

Received by:

Cirigoren A. Sproer

M.A. DANFORD

A.C.W.

FRIEDMAN & BRUYA, INC.

8/23/01

8-23-01

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Andrew John Friedman
James E. Bruya, Ph.D.
(206) 285-8282

3008-B 16th Avenue West
Seattle, WA 98119
FAX: (206) 283-5044

September 9, 1991

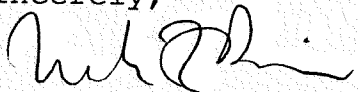
Greg Speer, Project Leader
Alaskan Copper
628 South Hanford
Seattle, WA 98134

Dear Mr. Speer:

Enclosed are the results of the analyses of the sample submitted on August 23, 1991 from Project Acid Tank Contamination, PO #M21338.

We appreciate this opportunity to be of service to you on this project. If you have any questions regarding this material, or if you just want to discuss any aspect of your projects, please do not hesitate to contact me.

Sincerely,



Mark Z Perin, Chemist

MZP/fae

Enclosures